WHAT IS CLAIMED IS:

1. A valve plate structure comprising:

an open/shut means for inhaling and discharging fluid through piston movement; and

a valve plate including a suction port coupled with the opening/shutting means for inhaling fluid through piston movement, a discharge port for discharging fluid through piston movement and a groove section having a plurality of cavities provided to surround the outside of the suction port or the discharge port.

2. The valve plate structure according to claim 1, wherein the open/shut means includes:

a suction valve having a suction plate at a position corresponding to the suction port of the valve plate to intake fluid through piston movement;

a discharge valve having a discharge plate at a position corresponding to the discharging port of the valve plate to discharge fluid; and

a head cover having a suction tube formed at a position corresponding to the suction port of the valve plate and a discharging tube formed at a position corresponding to the discharging port of the valve plate.

3. The valve plate structure according to claim 1, wherein the fluid is a coolant.

4. The valve plate structure according to claim 1, wherein each of the plurality of cavities has a width different from one another.

5. The valve plate structure according to claim 1, wherein the cavities are in a shape of circle or polygon such as rectangle and octagon. Col. 2, lines 31-33 & lines 61-63

6. The valve plate structure according to claim 1, wherein the width of the cavities increase as extending away from the center of the suction port or the discharging port of the valve plate. Col. 3, lines 1-2

7. The valve plate structure according to claim 1, wherein the cavities are fixed in depth.

8. The valve plate structure according to claim 1, wherein each of the cavities surrounding the suction port or the discharging port of the valve plate has a different shape from one another.

9. The valve plate structure according to claim 1, wherein the cavities are shaped in an inverse triangle to rapidly decrease in width as extending downward.

10. The valve plate structure according to claim 1, wherein the cavities are U-shaped to slowly decrease in width as extending downward.

11. The valve plate structure according to claim 1, wherein opening or closing functions of the open/shut means is operated via pressure difference.

12. A valve plate structure comprising:

an open/shut means for inhaling or discharging through piston movement; and

a valve plate including a suction port coupled to the open/shut means for inducing fluid through piston movement, a discharge port for discharging fluid through piston movement and a groove spirally provided to surround the outside of the suction port or the discharge port.

13. The valve plate structure according to claim 12, wherein the groove contacts with the suction port or the discharge port at one end thereof and has a spiral shape that increases in width as extending outward.

14. A valve plate structure comprising:

a suction valve to intake a low pressure of coolant through a linear back-and-forth movement of a piston and opening and shutting operation in response to the back-and-forth movement;

a valve plate coupled with the suction valve, and including a suction port for inhaling the low pressure of coolant through the piston movement, a discharging port for discharging a high pressure of coolant through piston movement and a groove section having a plurality of cavities provided to surround the outside of the suction port or the discharge port;

a discharging valve coupled with the valve plate for discharging the high pressure coolant through the reciprocating movement of the piston and the opening and shutting operation in response to the back-and-forth movement; and

a head cover coupled with the discharge valve, and including a suction tube formed at a position corresponding to the suction port of the valve plate and a discharging tube formed at a position corresponding to the discharge port of the valve plate.

15. The valve plate structure according to claim 12, wherein the suction valve, the valve plate, the discharging valve and the head cover are coupled via a bolt.